

# Casing Ticket

API Well Number:

**34-059-2-4370-00-00**

## Record of Casing, Cementing and Mudding

Well Owner: AMERICAN ENERGY UTICA LLC  
 Lease Name: RED HILL FARM MDS GR Well No. 3H  
 County: GUERNSEY Township: MADISON  
 Driller: NOMAC DRILLING CORP  
 Refer Top Kelly Bushing 1011 Lat: 0.000000 Long: 0.000000

Date Spudded: 06/27/2014  
 Date Completed: \_\_\_\_\_  
 WitnessType \_\_\_\_\_  
 Inspector CHRIS GRIMM  
 AD Meets Requirements  
 AD on Permit

Comments: Precision Rathole Inc. drilled a 36" hole to 100' and ran new 30" conductor casing. O-Tex Pumping cemented the casing to surface with 370 sacks of class H cement. There were approximately 30 barrels of cement returns. Nomac Drilling rig 80 drilled a 17.5" hole to a depth of 979'. They had new 13.375" casing in the ground, and were circulating when I arrived. They had to wash the last 40' of casing in. O-Tex Pumping broke circulation and pumped gel spacer followed by cement. Good circulation was maintained throughout the mixing process and there were no significant increases in pressure. They released the plug and were 15.3 barrels into displacement when the well instantly pressured up to 1760 psi. They shut down and let the pressure fall below 1500 psi. They attempted to pump again and the pressure immediately increased again after 0.2 barrels of displacement. O-Tex tried this two more times with the same result. AEU shut the job down and let the cement set up. They drilled the cement out of the casing and had a cement bond log ran. The log showed the top of the cement at 240'. Nomac Drilling rig 80 ran 1" tubing to a depth of 140' in the annulus of the 13.375" casing. O-Tex Pumping grouted the casing with 630 sacks of class H cement. They installed the blow out preventer and pressure tested the surface casing at 500 psi. for 30 minutes. Nomac Drilling rig 80 drilled a 12.25" hole on air to a depth of 6507'. They ran new 9.625" casing, equipped with a multi-stage tool at 3408'. They were having problems getting the last 70' in and had to wash the casing down. O-Tex Pumping established circulation and pumped the first stage of the job. They landed the plug, increased the pressure by 500 psi and held for 5 minutes. Weatherford opened the multi-stage tool and O-Tex pumped to confirm the tool was open. Nomac 80 circulated through the tool for three hours. O-Tex hooked up and pumped the second stage of the job. Good circulation was maintained throughout with approximately 58 barrels of cement circulated to surface. Nomac Drilling rig #80 drilled an 8.5" production hole on air to the curve, at which time they went to drilling on oil-based mud. They drilled to a total depth of 16027' and ran new 5.5" casing. O-Tex pumping cemented the casing with 2370 sacks of cement. They reported 66 barrels of cement returns.

### Strings

FLD HL2\* CONDITION

Bot 979 Diam 17.5 Top 0 LENGTH  Set Dt 11/15/2014

String Comments Casing  
 Condition, Weight and  
 Cement Basket

### Cement

BOC  0 TOC  0 DT\_CM  Duration   WITNESSED

CMT\_CON  INSPECTOR CHRIS GRIMM

CLASS\_CMT:  SACKS  WEIGHT  YIELD

Cement1

CLASS\_CMT2:  SACKS2  WEIGHT  YIELD

Cement2

# Strings

FLD

HL3\*

CONDITION

Bot  Diam  Top  LENGTH  Set Dt

String Comments Casing  
Condition, Weight and  
Cement Basket

# Cement

BOC  TOC  DT\_CM  Duration   WITNESSED

CMT\_CON  INSPECTOR

CLASS\_CMT:  SACKS  WEIGHT  YIELD

Cement1

CLASS\_CMT2:  SACKS2  WEIGHT  YIELD

Cement2

# Strings

FLD

HL4\*

CONDITION

Bot  Diam  Top  LENGTH  Set Dt

String Comments Casing  
Condition, Weight and  
Cement Basket

# Cement

BOC  TOC  DT\_CM  Duration   WITNESSED

CMT\_CON  INSPECTOR

CLASS\_CMT:  SACKS  WEIGHT  YIELD

Cement1

CLASS\_CMT2:  SACKS2  WEIGHT  YIELD

Cement2

# Strings

FLD

I1\*

CONDITION

New

Bot 6507 Diam 9.625 Top 0 LENGTH Set Dt 11/24/2014

**String Comments Casing  
Condition, Weight and  
Cement Basket**

40 lbs/ft, centralized, multi-stage tool at 3408'

# Cement

BOC 6507 TOC 0 DT\_CM Duration    WITNESSED

CMT\_CON O-TEX PUMPING LLC INSPECTOR CHRIS GRIMM

CLASS\_CMT: Unknown SACKS 1380 WEIGHT 12.5 YIELD 1.88

Cement1 Low Dense Cement: 1% C-15, 5% Gypsum, 0.6% C-20, 0.4% C-41P, 0.1% C-51, 0.1% X-Static

CLASS\_CMT2: Type H Cement SACKS2 180 WEIGHT 15.3 YIELD 1.27

Cement2 5% KCL (BWOW), 0.6% C-12, 0.4% C-41P, 0.1% C-51, 0.1% C-35

# Strings

FLD

PRD\*

CONDITION

New

Bot 16027 Diam 5.5 Top 0 LENGTH Set Dt 12/2/2014

**String Comments Casing  
Condition, Weight and  
Cement Basket**

20 lbs/ft, centralized

# Cement

BOC 16027 TOC 0 DT\_CM Duration    WITNESSED

CMT\_CON O-TEX PUMPING LLC INSPECTOR CHRIS GRIMM

CLASS\_CMT: 50/50 Poz SACKS 260 WEIGHT 13.5 YIELD 1.51

Cement1 5% KCL (BWOW), 4% gel, 0.5% FL-17, 0.4% C-41P, 0.15% C-20

CLASS\_CMT2: Type H Cement SACKS2 2110 WEIGHT 15.3 YIELD 1.27

Cement2 5% KCL (BWOW), 0.6% C-12, 0.4% C-41P, 0.15% C-51, 0.15% C-45, 0.15% C-20

# Strings

FLD

SRF\*

CONDITION

New

Bot 984 Diam 13.375 Top 0 LENGTH Set Dt 11/16/2014

String Comments Casing  
Condition, Weight and  
Cement Basket

54.5 lbs/ft, centralized

# Cement

BOC 984 TOC 0 DT\_CM Duration   WITNESSED

CMT\_CON O-TEX PUMPING LLC INSPECTOR CHRIS GRIMM

CLASS\_CMT: Type H Cement SACKS 1140 WEIGHT 15.6 YIELD 1.19

Cement1 1% CaCl2, 0.4% C-41P, 0.25 lb/sk Cello Flake

CLASS\_CMT2: Type H Cement SACKS2 630 WEIGHT 15.6 YIELD 1.2

Cement2 Grout job